



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D5425-043
Job Sheet 188015



Part No: D5425-043

Job Qty: 1 ea

Part Name: Float Skidtube Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 12/31/18

Job Tracking No:

Due Date: 2/20/19

Created By: Jesse White

Type: Stock

Description:

Note: DWG D5425 REV.B IPP REV:A 17.11.02 NEW ISSUE DD VERF:JFS IPP REV:B 18.08.20 AS PER DWG
REV.B DD VERF:DP

Ship Via:

Bill of Materials



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S142912



Part: D5425-043

Job No: 188015

Serial No/Batch: S142912

Revision: B

Inspector:

Exp Date:

Instructions: Various STC's

Date: 01/08/19

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐		FAULT CATEGORY Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread ☐			
Other/Details:					

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	2/20/19	2/20/19	0.00	0.00	Start Up Skid tubes-2		
110	Skid tubes	1 pcs	2/20/19	2/20/19	0.00	8.24	Skid tubes-3		
120	CNC Vertical Machining	1 pcs	2/20/19	2/20/19	0.00	22.77	HAAS1-4		
130	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC2 Machining-4		
140	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC8 Machining-4		
150	HandFinish	1 pcs	2/20/19	2/20/19	0.00	0.24	HandFinish1		
160	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC7-5		
170	CNC Bend Skid tubes	1 pcs	2/20/19	2/20/19	0.00	2.63	CNC Bend Skid tube		
180	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC5		
190	Skid tubes	1 pcs	2/20/19	2/20/19	0.00	8.24	Skid tubes-3		
200	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC5		
210	HandFinish	1 pcs	2/20/19	2/20/19	0.00	0.24	HandFinish6		
220	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC7-5		
230	Skid tubes	1 pcs	2/20/19	2/20/19	0.00	8.24	Skid tubes-3		
240	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC5		
250	HandFinish	1 pcs	2/20/19	2/20/19	0.00	0.24	HandFinish6		
260	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC7-5		
270	SprayPaint	1 pcs	2/20/19	2/20/19	0.00	0.00	Spray Paint		
280	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC14		
290	HandFinish	1 pcs	2/20/19	2/20/19	0.00	0.24	HandFinish4		
300	QC	1 pcs	2/20/19	2/20/19	0.00	0.00	QC5		
310	Packaging	1 pcs	2/20/19	2/20/19	0.00	0.00	Packaging3-2		
320	QC21-SA	1 Ea	2/20/19	2/20/19	0.00	0.00	QC21		

Part Op 110 - 1-Cut tube to finished length as per Dwg. 2-Deburr ends as per Dwg.
 Descriptions: 120 - 1-Machine as per Dwg. and Folio FB536 DWG REV: _____ FOLIO REV: _____ 2-Deburr as per Dwg.
 150 - 1-Scrub inside of tube with medium scotchbright.
 170 - 1-Bend Aft end of tube as per Dwg. and Folio _____. Insert Bending mandrel DT 10328 at 20.0" from aft end. Use buggy A,B,C. to stabilize tube. HEIGHT _____ 2-Bend Forward end of tube as per Dwg. and Folio _____. Insert Bending mandrel DT 10328 at 12.0" from fwd end. Use buggy A,B,C To stabilize tube. HEIGHT _____ 3-Record dimensions on work order.
 180 - #NAME?
 190 - 1-Drill remaining holes of DETAIL M, N, P. USING DT10340 A,B,C,D 2-Open holes to finished size as per Dwg. 3-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube.
 230 - 1-Wet install crossbolt spacers of Section G-G. Swage to 0.437 as per Dwg. PRIMER B _____ Start Time: _____ Finish Time: _____ ***CURE TIME 6HRS. BEFORE PROCEEDING TO NEXT STEP*** 2-Swage crossbolt spacers of Section F-F to 0.313 as per Dwg. 3-Trim / Grind flush, deburr. 4-Identify per QSI 044 6.1
 250 - ***DO NOT SUBMERGE TUBE IN DEOXIDIZER***
 270 - ***PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT*** 1-PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2-PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT BATCH: _____
 290 - 1-Install FWD and AFT cap seal with sikaflex-241 / 291 B 5163437 Exp: 14-6-16 Start time: _____ Finish time: _____ 2-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser. A/R LPS Procyon B 1433680

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6028-195	Crosstube Material, 7075-T73/T73511	1 Ea (1 ea)	90-Start up Operation	010791
D5518-1	Crossbolt Spacer	18 pcs (18 ea)	230-Skid tubes	5017944
D5512-1	Crossbolt Spacer	12 pcs (12 ea)	230-Skid tubes	51482641
AN3C5A	Bolt	6 Ea (6 ea)	290-HandFinish	5176455
D3672-1	Washer, Phenolic	6 pcs (6 ea)	290-HandFinish	5164009
D5483-041	Tow Cap Assembly	1 pcs (1 ea)	290-HandFinish	5150717
D5484-041	Aft Cap Assembly	1 pcs (1 ea)	290-HandFinish	5151947
NAS1149C0332R	Washer	6 Ea (6 ea)	290-HandFinish	5158079

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

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Other/Details:																																							

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6028-195	1	13	0
230-Skidtubes	D5512-1	12	40	0
	D5518-1	18	93	0
290-HandFinish	AN3C5A	6	1,249	0
	D3672-1	6	1,959	0
	D5483-041	1	0	0
	D5484-041	1	0	0
	NAS1149C0332R	6	3,130	0
Part Specifications				
Specifications could not be found.				

Plex 12/31/18 2:12 PM dart.white.jesse

Entered: _____ Date: _____



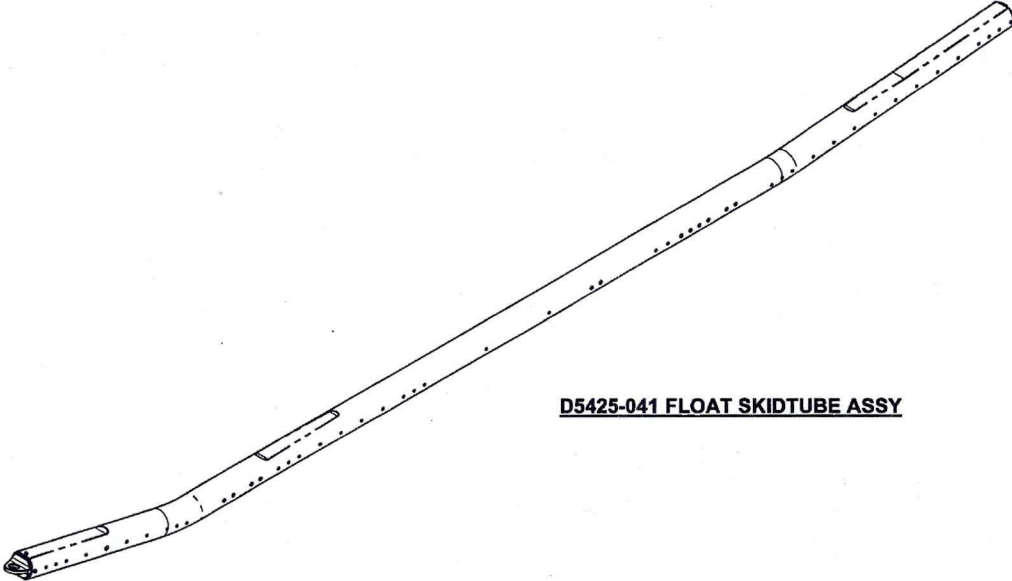
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐		DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐																															
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Other/Details:																																			

QTY -041	P/N	DESCRIPTION
X	D5425-041	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-1	FLOAT SKIDTUBE
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
37	D5518-1	CROSSBOLT SPACER
6	AN3CSA	BOLT
6	NAS1149C0332R	WASHER



D5425-041 FLOAT SKIDTUBE ASSY

RELEASED
2018 AUG 16
ECN 18-736

REV.	DESCRIPTION	NO	DATE
B	CHANGE HOLE SIZE TO IMPROVE OFF-AXIS SWAGING IN SHEETS 5 AND 6 (NCR18-6741). PICTORIAL UPDATE DUE TO CHANGES IN D5483-1.	NO	18.02.05
A	NEW ISSUE	NO	17.07.19

APPROVED

DESIGN NO. NO
DRAWN NO
CHECKED ZF
MFG. APPR. DD
APPROVED NO
DE APPR. DS

DART AEROSPACE USA, INC.
EUGENE, OR

DRAWING NO. D5425
TITLE 412 FLOAT SKIDTUBE
SCALE NTS

REV. B
SHEET 1 OF 10

DATE 18.02.05

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Entered: _____ Date: _____

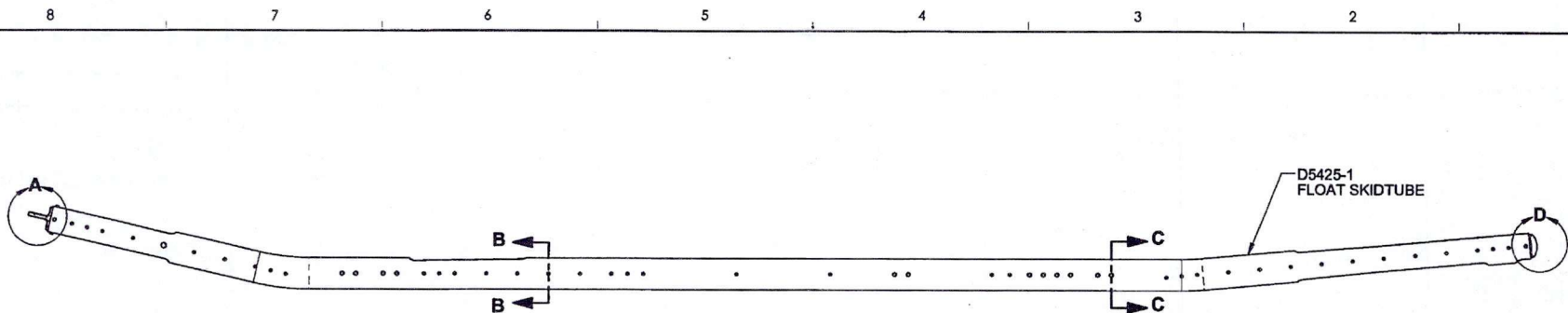


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

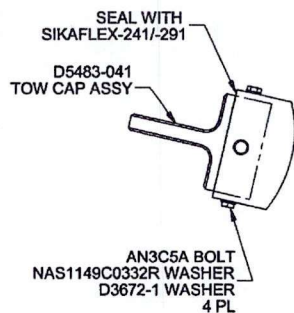
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Route update only ☐

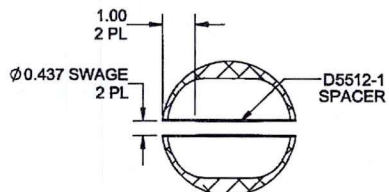
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
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D5425-041 FLOAT SKIDTUBE ASSY

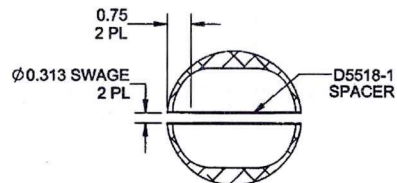


DETAIL A
SCALE 4X



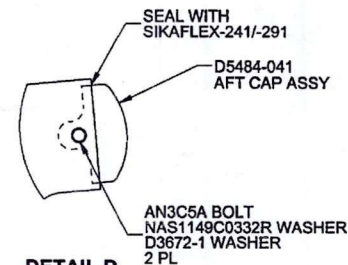
AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR $\phi 0.508$ HOLES ONLY:
1. WET INSTALL D5512-1 SPACER PER QSI 002
2. SWAGE TO $\phi 0.437$ X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION C-C
SCALE 4X
12 PL



AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR $\phi 0.377$ HOLES ONLY:
1. INSERT D5518-1 SPACER
2. SWAGE TO $\phi 0.313$ X 0.75 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B
SCALE 4X
37 PL



DETAIL D
SCALE 4X

RELEASED

2018 AUG 16

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME PER DART QSI 005 4.2.1.3.3
PAINT PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 54.5lbs
- 8) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 2 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	18.02.05	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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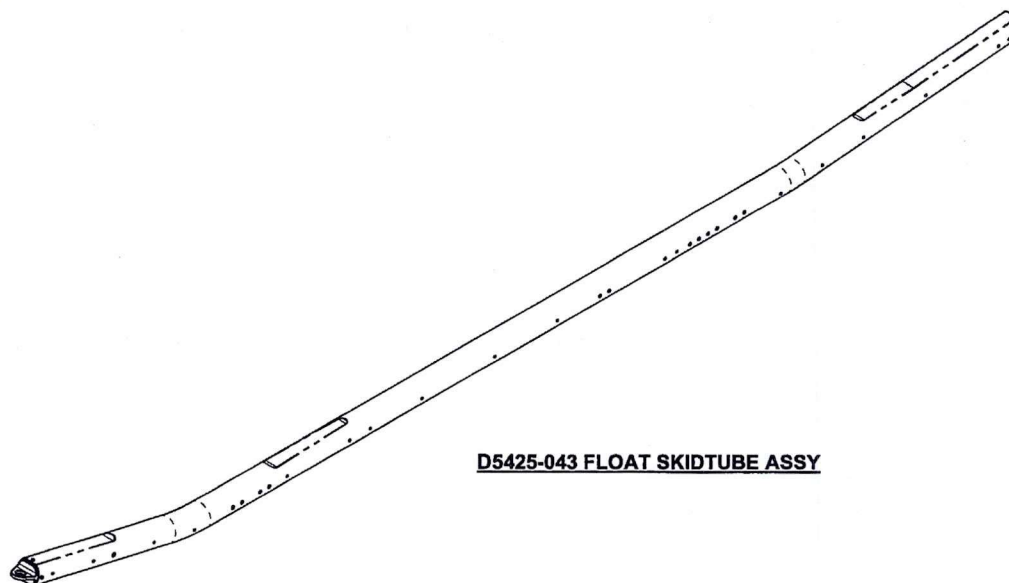
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Other/Details:					

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6	D3672-1	WASHER
1	D5425-3	FLOAT SKIDTUBE (DART TRIBAG)
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
18	D5518-1	CROSSBOLT SPACER
6	AN3C5A	BOLT
6	NAS1149C0332R	WASHER



D5425-043 FLOAT SKIDTUBE ASSY

RELEASED

2018 AUG 16 *JP*

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 3 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
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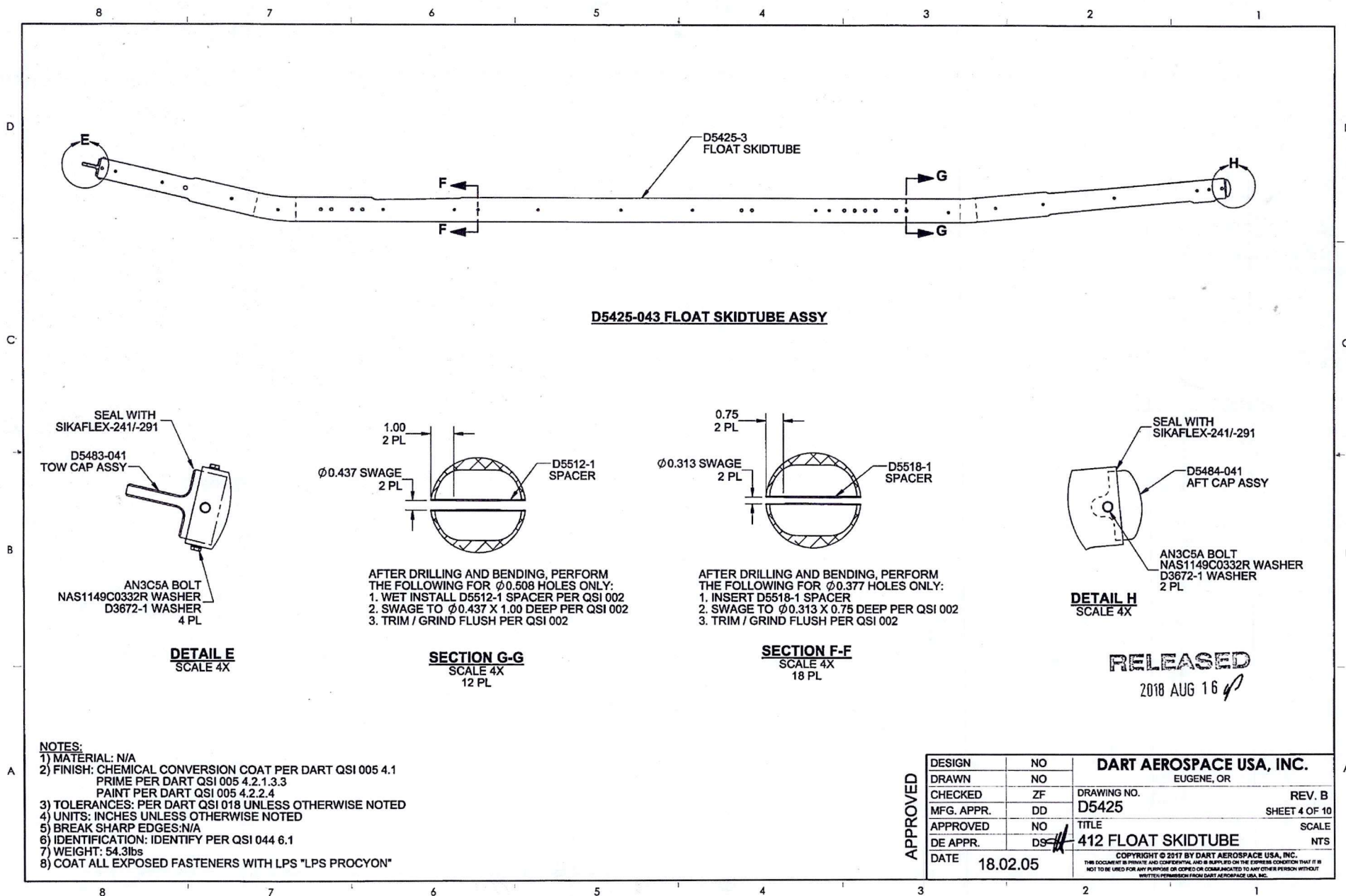


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Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

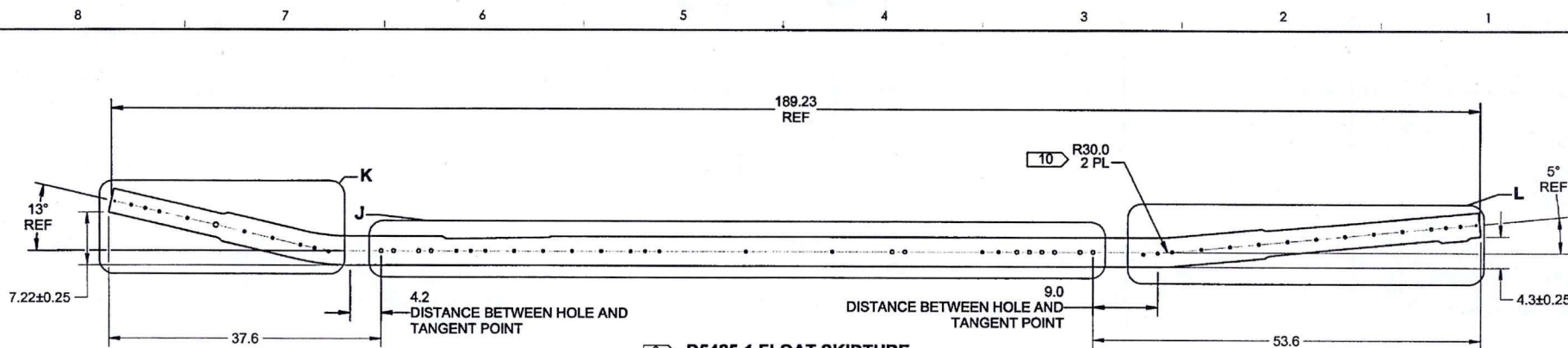


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

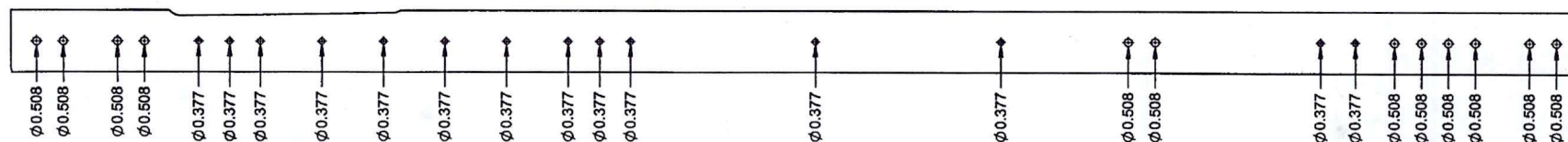
NCR No. _____

Route update only ☐

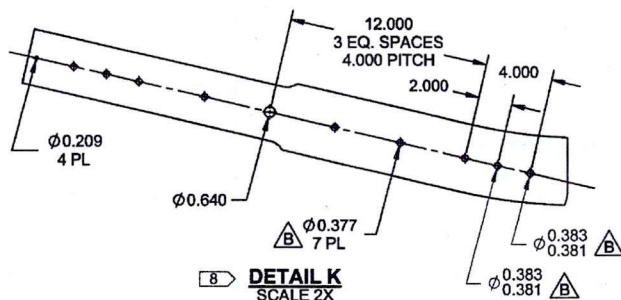
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



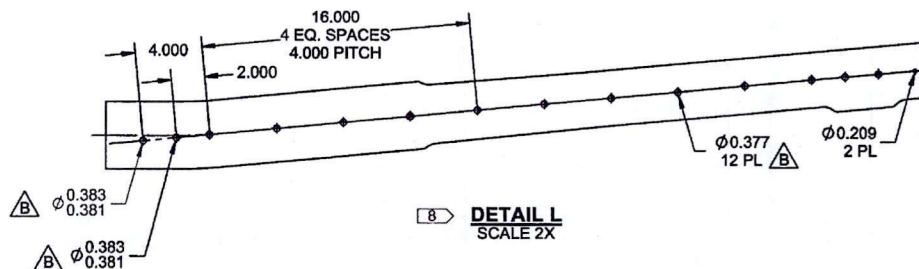
9 D5425-1 FLOAT SKIDTUBE



8 DETAIL J
SCALE 2X



8 DETAIL K
SCALE 2X



8 DETAIL L
SCALE 2X

NOTES:

- 1) MATERIAL: MAKE FROM D5425-1DRILL
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 52.57 lbs
- 8) ALL CENTERLINE HOLES THRU, BOTH SIDES AND ALIGNED WITHIN 0.010
- 9) MAXIMUM TWIST ALLOWANCE 3° BETWEEN FWD AND AFT BEND, 3° FROM EXTRUSION CENTERLINE AT ANY POINT
- 10) MAXIMUM 5% CRUSHING PER QSI 038 7.1

RELEASED
2018 AUG 16

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 5 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	18.02.05	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC.	
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Entered: _____ Date: _____

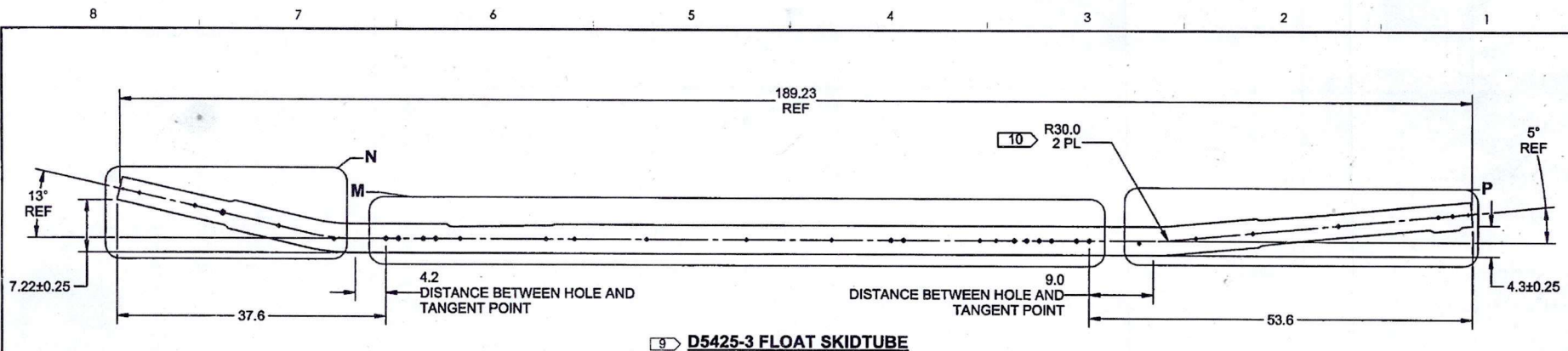


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

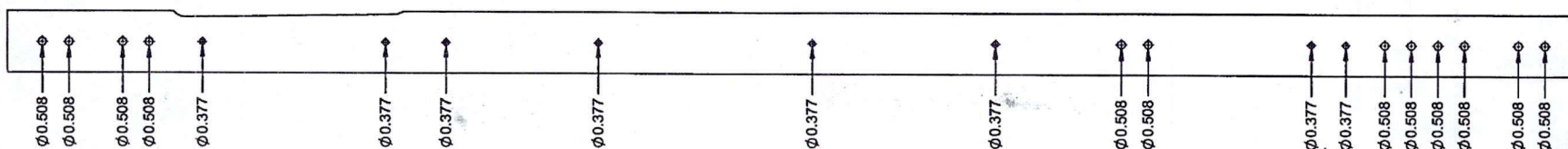
NCR No. _____

Route update only ☐

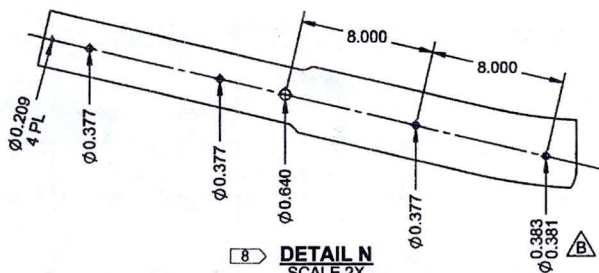
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					



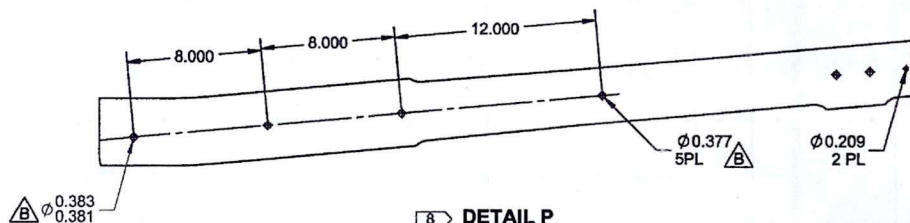
9 D5425-3 FLOAT SKIDTUBE



8 DETAIL M
SCALE 2X



8 DETAIL N
SCALE 2X



8 DETAIL P
SCALE 2X

NOTES:

- 1) MATERIAL: MAKE FROM D5425-3DRILL
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 52.57 lbs
- 8) ALL HOLES THRU, BOTH SIDES AND ALIGNED WITHIN 0.010
- 9) MAXIMUM TWIST ALLOWANCE 3° BETWEEN FWD AND AFT BEND, 3° FROM EXTRUSION CENTERLINE AT ANY POINT
- 10) MAXIMUM 5% CRUSHING PER QSI 038 7.1

RELEASED

2018 AUG 16

APPROVED

DESIGN	NO
DRAWN	NO
CHECKED	ZF
MFG. APPR.	DD
APPROVED	NO
DE APPR.	DS
DATE	18.02.05

DART AEROSPACE USA, INC.
EUGENE, OR

DRAWING NO.
D5425

REV. B

SHEET 8 OF 10

TITLE
412 FLOAT SKIDTUBE

SCALE

NTS

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Entered: _____ Date: _____

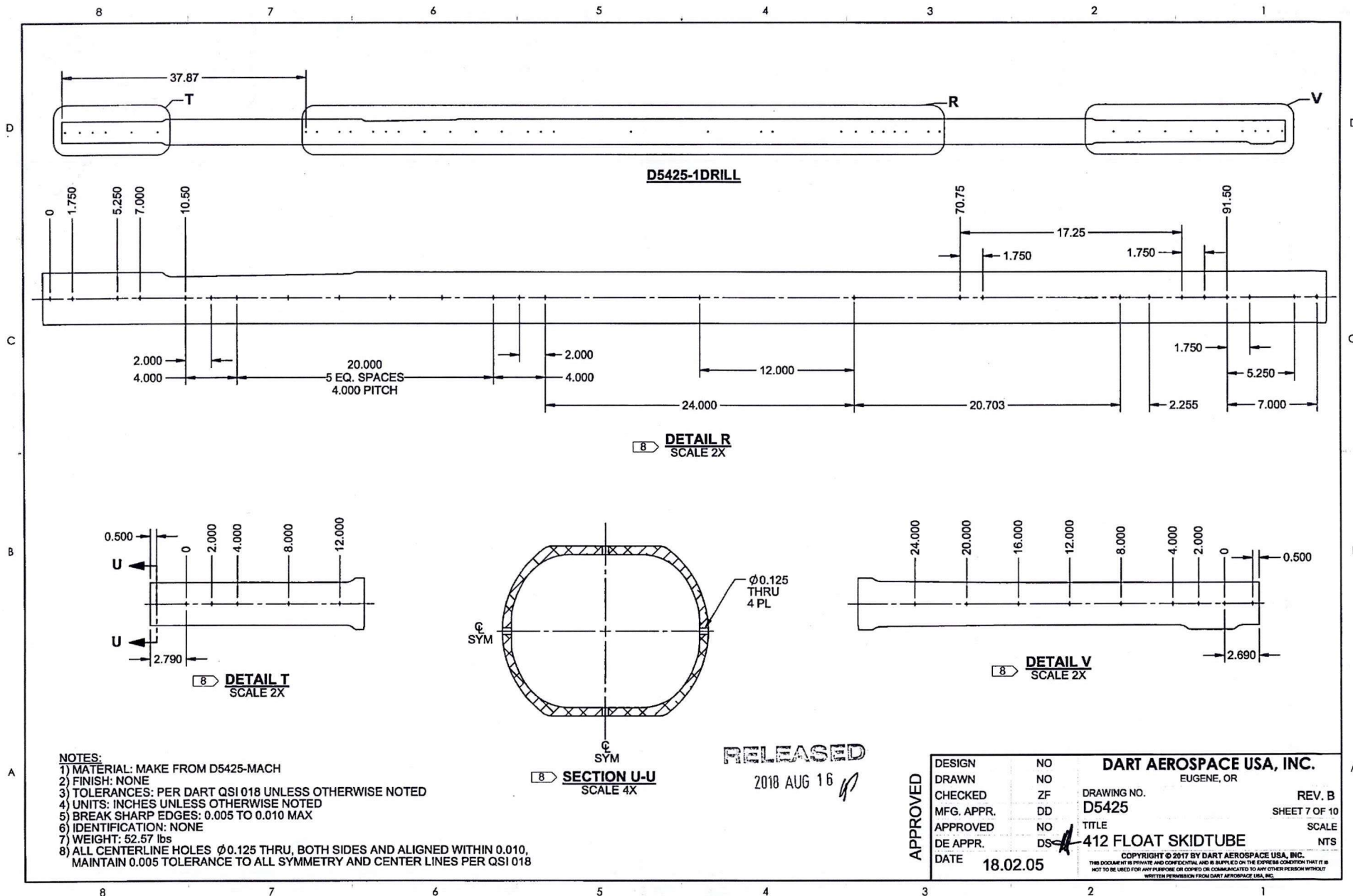


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

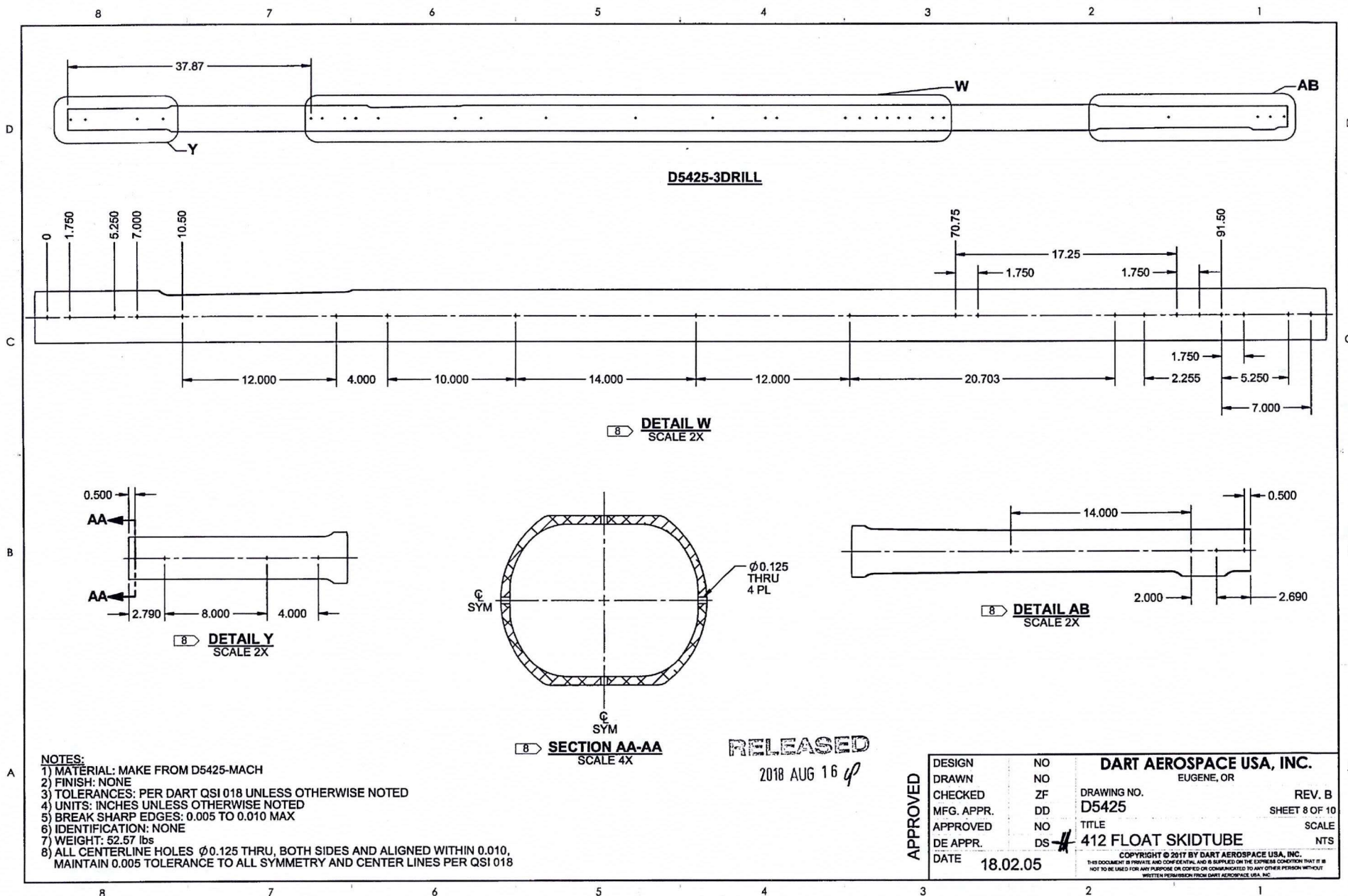


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

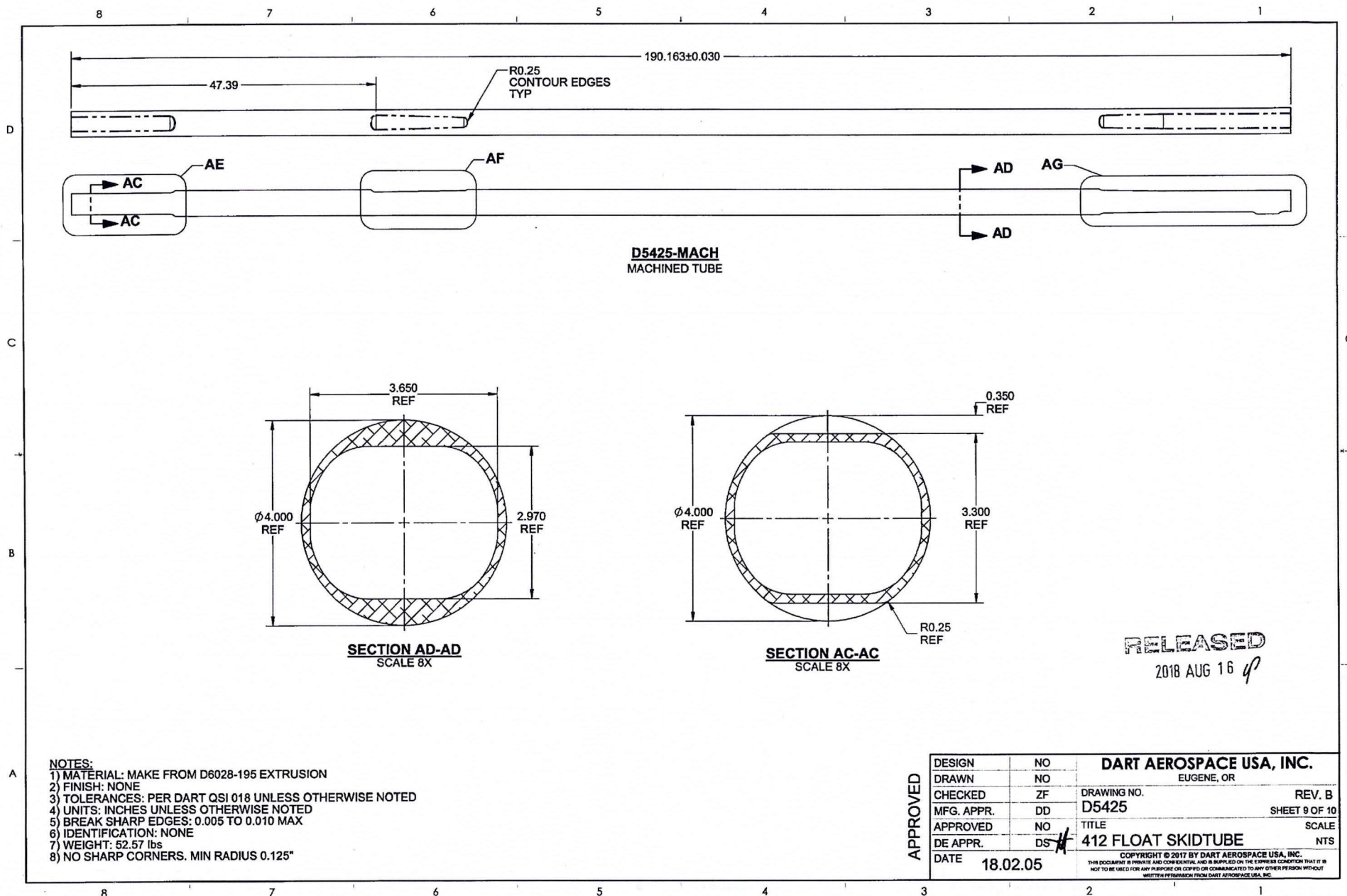


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

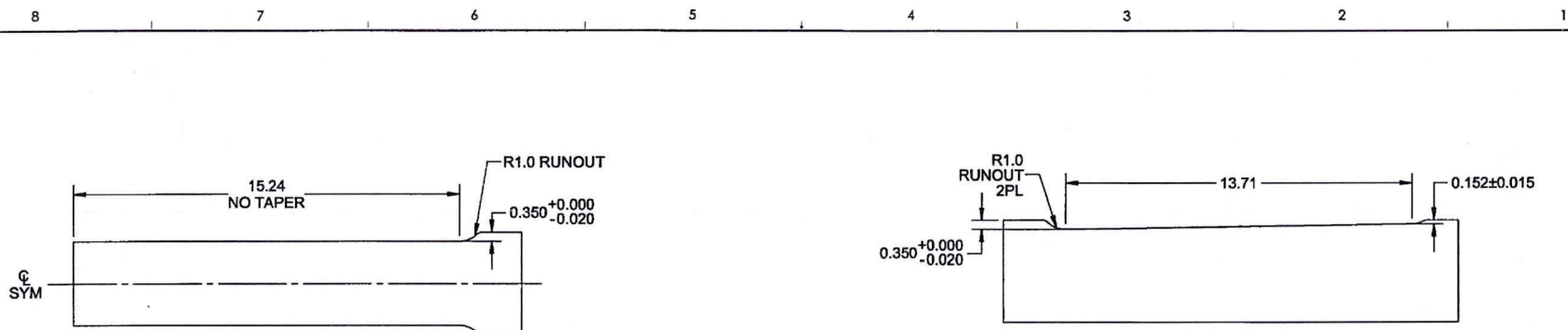


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

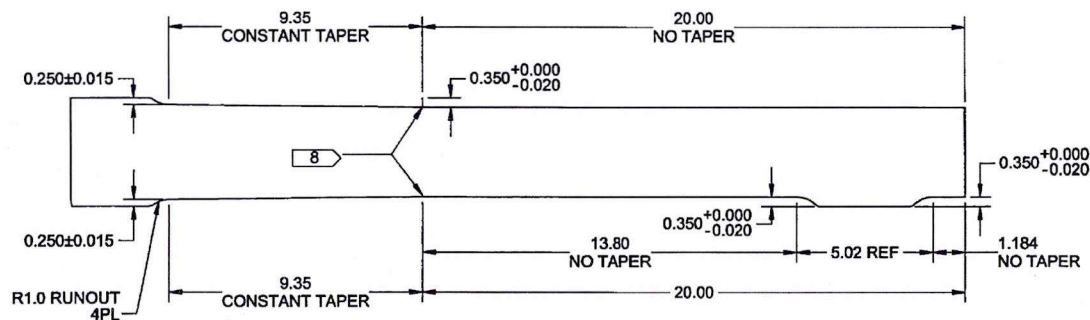
Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



DETAIL AE
SCALE 3X

DETAIL AF
SCALE 3X



DETAIL AG
SCALE 3X

RELEASED

2018 AUG 16 *4P*

APPROVED	DESIGN	NO	DART AEROSPACE USA, INC.	
	DRAWN	NO	EUGENE, OR	
	CHECKED	ZF	DRAWING NO.	REV. B
	MFG. APPR.	DD	D5425	SHEET 10 OF 10
	APPROVED	NO	TITLE	SCALE
	DE APPR.	DSS	412 FLOAT SKIDTUBE	NTS
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Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

